

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 22

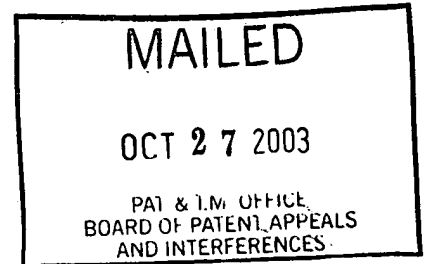
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte FISSEHA MEKURIA

Appeal No. 2003-1077-  
Application No. 09/388,609

ON BRIEF<sup>1</sup>



Before RUGGIERO, GROSS, and LEVY, Administrative Patent Judges.  
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-13, which are all of the claims pending in this application.

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<sup>1</sup> The Oral Hearing scheduled for October 7, 2003 was waived by appellant in a communication received, via facsimile, on August 20, 2003.

BACKGROUND

Appellant's invention relates to a method and system for voice dialing. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A speech recognition system in a mobile telephone, the speech recognition system comprising:

a stored vocabulary, wherein words in the vocabulary are arranged in a trellis structure comprising a plurality of different groups of words, and

a word group selection system for enabling a user to speak via voice commands to select at least a first of said plurality of different groups of words, said first group of words being selected based upon at least a word spoken by the user, so that a limited number of groups of the entire vocabulary, less than said plurality, is searched for a word during subsequent speech recognition processes in the mobile telephone after selection of at least the first of said plurality of groups of words.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Gupta et al. (Gupta)	5,515,475	May 7, 1996
Basore et al. (Basore)	5,752,232	May 12, 1998

Claims 1-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Basore in view of Gupta.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellant regarding the above-noted rejection,

we make reference to the examiner's answer (Paper No. 16, mailed October 2, 2002) for the examiner's complete reasoning in support of the rejection, and to appellant's brief (Paper No. 15, filed July 15, 2002) and reply brief (Paper No. 17, filed November 22, 2002) for appellant's arguments thereagainst. Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

#### OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejection advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we reverse. We begin with claims 1-4 and 6-9 (Group I) (brief, page 3).

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or

evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, pages 3 and 4) is that Basore teaches that the vocabulary is stored in a database or dictionary, but does not specifically disclose the structure as a trellis. To overcome this deficiency in Basore, the examiner turns to Gupta for a teaching of a trellis/tree structure for matching spoken utterances to stored vocabulary words, in order to reduce recognition time without sacrificing accuracy of recognition.

Appellant asserts (brief, pages 4 and 5) that in Basore, when the command "Help" is issued, the application software "selects the active vocabulary in the dictionary 127 according to the application and according to the previous command or commands for a response, (not for speech recognition as required by the claims)." It is argued (brief, page 5) that "[i]n other words, after recognizing words such as 'Help' and 'TV Schedule', Basore selects applications for purposes of responses, but not for purposes of speech recognition as required by claim 1."

Appellant asserts (id.) that Gupta cannot overcome the fundamental flaws of Basore because in Gupta, the trellis vocabulary contains a network of allophone models, where each branch of the network is one of the allophone models and each complete path through the network is thus a sequence of models representing a word in the vocabulary. It is further argued (brief, pages 5 and 6) that even if Basore and Gupta were combined, the invention would not be met because neither reference discloses or suggests selection of a group of words based on a word spoken by a user, and thereafter in subsequent speech recognition processes searching only that selected group of words for recognizing speech input; and because in Gupta, the trellis structure is used for recognizing separate allophones in different steps based on probability, and not for searching among a limited number of word groups as claimed.

The examiner responds (answer, page 11) that the response words (provided by the system of Basore), include the restricted set of command words that will be recognized during the next step. The examiner argues (id.) that "[t]hus, the 'sports, movies, series, specials, news, or other' (in the response cited in lines 35-36) implies the user is prompted to speak one of

these categories, and that the recognition vocabulary is selected only therefrom." (col. 5, lines 34-36).

From our review of Basore, we find that after receiving the response "Would you like categories under sports, movies, series, specials, news, or other" that the response from the user is expected to be from among the group listed, and that when the user responds "movie" the speech recognition is only looking for one of the listed words provided to the user (figure 3). Thus, we find that the speech recognition process applied to the subsequent response from the user, i.e., "movie", will be applied only to the limited vocabulary in the list provided to the user. Accordingly, we find that the spoken voice command "help" selects at least a first of a plurality of different groups of words, i.e., "sports, movies, series, specials, news or others," and that this series of words being selected is based upon the word "help" spoken by a user, so that during subsequent speech recognition, i.e., when the user selects "movies," less than the entire vocabulary is searched. We are cognizant that in Basore, a system response is provided between each word or words to be recognized by the system. However, we find nothing in the claims that would require the subsequent speech recognition to directly follow the previous speech recognition. Thus, we find that this

limitation is met by Basore, and agree with the examiner (answer, pages 3 and 4) that Basore lacks arranging the words in the vocabulary in a trellis structure. We add that each of the independent claims requires that the trellis structure comprises a plurality of different groups of words. We observe at the outset that as pointed out by appellant (brief, page 5) "[e]ach complete path through the network is thus a sequence of models representing a word in the recognition vocabulary." In addition, figures 1a and 1b of Gupta illustrate portions of the vocabulary network (col. 4, lines 4-6). Each path includes a branch representing an allophone (col. 4, lines 7 and 8). Although the vocabulary network is generally a tree structure as shown in figure 1a, it may have paths that recombine as illustrated by figure 1b, which represents two allophone transcriptions of the word "record" (col. 4, lines 20-23).

Turning to Basore, we find that in Basore, when switch 111 is moved to the voice channel position, a digital signal is transmitted to voice activated device 120 (col. 2, lines 27-31). The microprocessor 124 of the voice activated device 120 has a memory 125 including a phonetic acoustic models database 126 and a phonetics spellings dictionary 127. The dictionary stores the phonetic spelling of words and the identifiers associated with



each word (col. 2, lines 56-64). In operation, once a connection is established between the voice activated device 120 and remote central office 160, the processor 165 at the remote central office 160 retrieves the phonetic spellings for the applications for whose services the user has registered (col. 3, line 62 through col. 4, line 1). The phonetic spellings are transferred to device 120 along with a unique identifier for each word, where the formation is stored in dictionary 127 (col. 4, lines 30-33). The voice activated device provides information such as weekly television schedules, daily weather reports, selected stock prices, etc. available to the user (col. 4, lines 22-29). In speech recognition unit 128, which is in the voice activated device 120, the digitized speech is converted to a representation of cepstral coefficients using fast Fourier analysis (col. 4, lines 52-62). The user's commands are processed by constructing, in a manner known in the art, from the phonetic acoustic models database 126 and the phonetic spellings stored in the dictionary (col. 4, lines 63-67).

From the disclosure of Basore of using the phonetic spellings received by the voice activated device from the remote central office in the speech recognition process, we find that Basore appears to use a different type of speech recognition

system than Gupta. Because Basore uses his system to prevent problems relating to noise, reduced bandwidth and variations in acoustics in telephone handsets (col. 1, lines 30-37) and discloses (col. 4, lines 37-39) that the result of sending the phonetic spellings and identifiers to the voice activated system is that "[t]he voice activated device 120 can then make extensive information quickly available to the user without requiring a high bandwidth network," we find no teaching or suggestion in the prior art that would have taught or suggested an artisan to use the speech recognition method of Gupta in the voice activated telephone system of Basore. Nor are we persuaded by the examiner's assertion that the system of Gupta, if used in Basore, would result in faster recognition of speech, as we find no suggestion in the references to support this assertion. Moreover, because of the limited computational ability of the processors in mobile phones, we fail to see how the phone of Basore could carry out the operations performed by Gupta in a mobile phone as recited in the claims. From all of the above, we find that the examiner has failed to establish a prima facie case of obviousness of independent claims 1, 6, and 12. Accordingly, the rejection of claims 1-13 under 35 U.S.C. § 103(a) is reversed.

To summarize, the decision of the examiner to reject claims 1-13 under 35 U.S.C. § 103 is reversed.

Joseph H. Lippman

Aneta Pellman Gross

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STUART S. LEVY

SSL/kis

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NIXON & VANDERHYE, P.C.  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201